Michigan Biosolids Team

Biosolids 101

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Urban Wastewater Systems

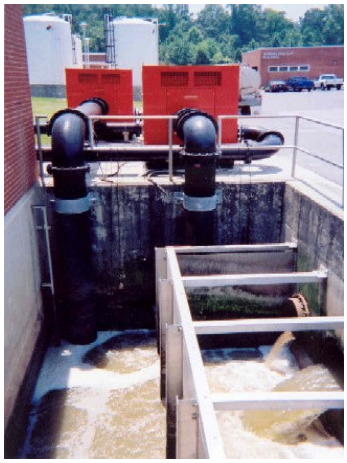
In urban and suburban areas where people are packed closer together and where there is a lot more wastewater to treat, the community will construct a sewer system that collects wastewater and takes it to a **wastewater treatment** facility.

In the ideal case, a sewer system is completely **gravity-powered**, like a septic system. Pipes from each house or building flow to a **sewer main** that runs, for example, down the middle of the street. The sewer main might be 3 to 5 feet (1 to 1.5 m) in diameter. Periodically, a **vertical pipe** will run up from the main to the surface, where it is covered by a **manhole cover**. Manholes allow access to the main for maintenance purposes.

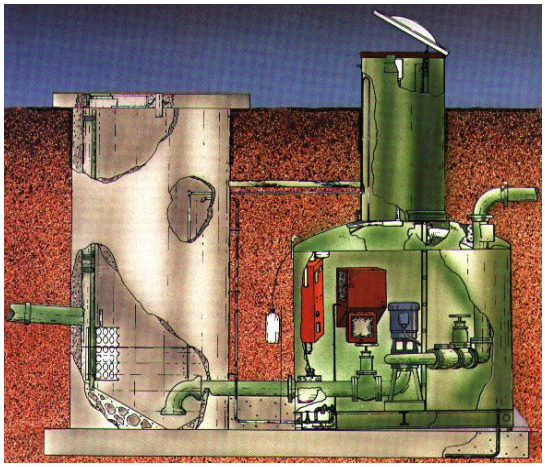
The sewer mains flow into progressively larger pipes until they reach the wastewater treatment plant. In order to help gravity do its job, the wastewater treatment plant is usually located in a low-lying area, and sewer mains will often follow creekbeds and streambeds (which flow naturally downhill) to the plant.

Normally, the lay of the land will not completely cooperate, and gravity cannot do all the work. In these cases, the sewer system will include a **grinder-pump** or a **lift station** to move the wastewater up over a hill. The following photos are examples of pumps used in lift stations.

Screw Pump Lift Station



Self Priming Pump



Cross Section of a Lift Station

Next week: the start of the series describing wastewater treatment

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